REMARKS

Claims 38 through 58, 61, 64, 65, 66, 68, and 69 are pending in this application. Claim 38 has been amended herein. Support for the amendment to the claim 38 may be found in claim 38 as filed originally. This amendment is believed to place the application in condition for allowance, and entry thereof is requested respectfully. Reconsideration of this application in view of the foregoing amendment and the following remarks is requested respectfully as well.

Response to Amendment:

The Applicant appreciates the entry of the amendment filed March 25, 2004. The Applicant must point out, however, that claims 38 through 57 are also pending in this application, not just claims 48 through 58, 61, 64, 65, 66, 68, and 69, as stated in paragraph 3 of the final Office action.

Rejections Withdrawn:

The Applicant appreciates the consideration of the remarks filed March 25, 2004, and withdrawal of the objections to the claims and the rejections under 35 U.S.C. § 112, second paragraph.

Response to Arguments:

The Applicant appreciates the consideration of the arguments filed March 25, 2004. The final Office action asserts that it is unclear how multiple heads and intensities would be used to perform immunological reactions and hybridizations. Since, as acknowledged graciously in the final Office action, the specification provides specific examples of how multiple heads and intensities might be used in fixation and processing, it is submitted that persons of skill in the art would read the paragraph at page 11, lines 7-11 as disclosing that those examples were to be extrapolated to decreasing the time required to perform immunological reactions and hybridizations as well. The specification thus provides several specific examples of how to make and use the invention, and then points out other venues that might benefit from the invention as well.

Furthermore, there is no requirement in 35 U.S.C. § 112 for an inventor to provide an exhaustive list of all of the possible applications for a particular process, beyond giving sufficient examples of how the process works for persons of skill in the art to make and use the process. Such a list would be needlessly repetitive. A specification, after all, is written for persons of *skill*

in the art, not any inexperienced novice looking to break into the field. The specification is thus submitted to be enabling within the meaning of 35 U.S.C. § 112.

Claim 38 now recites more particularly a method step directed to performing the various processes, in response to the Examiner's implied suggestion at page 11, paragraph 36 of the final Office action. The Applicant thanks the Examiner for his suggestion.

Claim Rejections - 35 U.S.C. § 112:

Claims 50, 52, 64, and 65 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection is traversed.

The final Office action asserts that the specification doesn't say how multiple head or intensity would be used in order to perform immunohistochemistry, *in situ* hybridization, Northern and Southern hybridization, or an ELISA. To the contrary, the specification describes particular examples of techniques for using ultrasound for fixation and processing at pages 13 and 14. It is submitted that persons of skill in the art would read the paragraph at page 11, lines 7-11 as disclosing that the techniques of using ultrasound for fixation and processing described at pages 13 and 14 were to be extrapolated to decreasing the time required to perform immunological reactions and hybridizations as well.

Furthermore, the specification does include specific examples of using ultrasound with immunohistochemistry (Example 3, page 27 and Example 9, page 30), Northern and Southern hybridization (Example 5, page 29), and *in situ* hybridization (Example 4, page 28, Example 10, page 30, and Example 11, page 31). Claims 50, 52, 64, and 65 are therefore submitted to be enabled by the specification. Withdrawal of the rejection is earnestly solicited.

Claim Rejections - 35 U.S.C. § 102:

Claims 38, 39, 40, 43, 45-48, 56, and 58-64 were rejected under 35 U.S.C. § 102(b) as anticipated by Lanza et al., US 5,958,371. The rejection is traversed, to the extent it might apply to the claims as amended.

Claim 38 recites:

"performing a process on said sample selected from the group consisting of:

immunohistochemistry,

in situ hybridization,

fluorescent in situ hybridization,

a Southern hybridization,

a Northern hybridization,

a Western annealing, and

an ELISA; and

using ultrasound at a frequency of at least 100 kHz."

Lanza neither teaches, discloses, nor suggests performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA using ultrasound at any frequency, let alone a frequency of at least 100 kHz. Lanza makes no mention at all of performing hybridization on nitrocellulose membranes using ultrasound at column 7, lines 35-64, contrary to the assertion in the final Office action. Rather, Lanza uses ultrasound for *detecting* any molecular epitope or receptor . . . without the need for use of ionizing radiation with or without associated invasive procedures, as described at column 7, lines 43 through 45, not performing immunohistochemistry, *in situ* hybridization, fluorescent *in situ* hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA *itself*, as recited in claim 38.

Furthermore, Lanza describes a method for enhancing reflectivity at column 4, line 60, not a method of performing immunohistochemistry, *in situ* hybridization, fluorescent *in situ* hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA, as recited in claim 38. Claim 38 is thus not anticipated by Lanza. Claims 39, 40, 43, 45 through 48, 56, and 58 through 64 depend from claim 38 and are thus not anticipated by Lanza either.

Furthermore, Lanza describes ultrasound-based ELISA-type laboratory diagnostic *assays* in liquid and solid phase systems at column 7, lines 53-55, not performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA *itself*, as recited in claim 38. Lanza is concerned with ultrasonic imaging, drug or chemotherapeutic agent delivery, and diagnostic assays and detection systems, as described at column 1, lines 16-18, not

performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38.

Furthermore, Lanza's goal is adapting ligand-based binding systems to an ultrasonic contrast system, as described at column 2, lines 31 and 32, not performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38.

Finally, Lanza describes a method for enhancing reflectivity at column 4, line 60, not a method of performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA, as recited in claim 38. Claim 38 is submitted to be allowable. Withdrawal of the rejection of claim 38 is earnestly solicited.

Claims 39, 40, 43, 45 through 48, 56, and 58, 61, 63, and 64 depend from claim 38 and add further distinguishing elements. Claims 39, 40, 43, 45 through 48, 56, and 58, 61, 63, and 64 are also submitted to be allowable. Withdrawal of the rejection of claims 39, 40, 43, 45 through 48, 56, and 58, 61, 63, and 64 is earnestly solicited.

Claim Rejections - 35 U.S.C. § 103:

Claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 were rejected under 35 U.S.C. § 103 as being unpatentable over various combinations of Lanza and Gravlee, Jr. US 3,961,097, Blank et al., US 5,913,826, Lang et al., US 5,941,825 and Kretz, US 4,403,509. The rejection is traversed. Reconsideration is earnestly solicited.

Claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 depend from claim 38 and add further distinguishing elements. None of the cited references describe performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38. Since none of the cited references describe performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA separately, their combination cannot, either.

With respect to the combination of Lanza and Gravlee, even if it were obvious to

discover the optimum workable range of the methods disclosed by Lanza, as asserted in the final Office action at page 6, there is still no basis for a conclusion that it would be obvious to discover the optimum workable range of a method of performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38. The assertion at page 10 is therefore submitted to be a non sequitur. Claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 are also submitted to be allowable. Withdrawal of the rejection of claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all claims 38 through 58, 61, 64, 65, 66, 68, and 69 are allowable over the cited references. Allowance of all claims 38 through 58, 61, 64, 65, 66, 68, and 69 and of this entire application are therefore respectfully requested.

Respectfully submitted,

By 

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